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CONTENTS

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Canadian Journal of Psychology

NEW PSYCHOLOGIES OF YESTERDAY AND TODAY[1]

ROBERT B. MACLEOD
Cornell University

SOMEHOW or other we always seem to have something which goes by the name of "the new psychology." About fifty years ago a book was published with this title (8). It dealt exclusively with the laboratory investigation of sense-perception and simple reactions. The new psychology of the 80's and the 90's was the experimentalist reaction against the arm-chair methods of classical psychology. Some twenty years later the "new psychology" was the fresh and challenging but frequently disquieting interpretation of human motivation inspired by the psychoanalytic method of Sigmund Freud. The behaviourist movement and the configurationist movement have in their day been designated as the "new psychology," and so has the testing movement which flowered after the First World War. If one were to raise the question now as to what is the new psychology, I suspect that one would find the term applied to the current attempts to make a science out of the study of social attitudes; for the main trend of psychology today seems to be in the social direction.

A review of the "new psychologies" of yesterday and today shows how in the course of its history psychology has gradually extended its affiliations. Beginning as a special philosophical discipline in the humanistic tradition, it has tried, all too frequently in a mood of protest, to become a natural science, a biological science, a medical science, and now a social science. Each new turn in its development has been heralded as a "new psychology," and presumably we shall have to live through many more. What I propose to do here is to select for closer examination three of these new psychologies, representing successive emphases on the study of perception, of motivation, and of social attitudes, in the hope that we can discover in them certain threads of continuity which can ultimately be woven together into a single meaningful pattern.

I

It is no mere historical accident that the "new psychology" of fifty years ago was concerned almost exclusively with the elementary processes of sense-perception, for, strange as it may seem to the student of today, the central problem of psychology down through the ages has

[1]This is an abridgement of an address delivered at the Annual Meeting of the Ontario Psychological Association, London, Ont., January 21, 1949.

199

been that of cognition. Perhaps it is a disparaging reflection on the modern age that this problem does not seem to spring forth naturally as curiosity-evoking. The beginner today expects us to plunge immediately into the theory of the inferiority complex and the techniques of aptitude testing. He has little spontaneous curiosity about the processes of his own knowing. Yet, when we take the long view, we find that psychology has developed as part of the attempt to answer that most persistent of all questions: Can we have any secure knowledge?

One would like to know what kind of world it is that stimulates man to be curious about the basis of his own knowledge. Is it a world which seems less predictable and less controllable than does our own, and consequently intensifies the need for certainty and security? Or is it a world which has become so stable and predictable as to free man from the demands and the worries which stifle reflection? Perhaps our social historians can find the answer for us. But, whatever the answer, we can see in the history of psychology an expression of the persistent concern of man about the accessibility of true knowledge. Can we ever know the truth and know that we know it? This is the ultimate problem of epistomology. It suggests the more modest question: What are the processes whereby we come to know what we do know? This is the classic problem of psychology.

There are some psychologists today who would assert that if we answer the psychological question, that is, if we understand the processes of knowing, we shall have solved the problem of the nature and validity of knowledge. Most of us would, I hope, consider such an assertion presumptuous. There were many centuries, however, during which it was considered presumptuous to suggest that an empirical psychology as such could have any bearing on the epistomological problem. Man in his quest for certainty and security had yielded to the belief that the only meaning life could have was to be stated in theological terms, that the only source of secure knowledge lay not in experience but in revelation. If the only truth we know is the truth of revelation, the task of the psychologist is merely the modest and not very exciting one of demonstrating some of the ways in which revelation takes place. Without disparaging in the least the achievements of scholastic psychology, one can see how an empirical psychology, nourished by the faith that through a study of man alone we can come to an understanding of man's cognitive processes, became not just another casual inquiry but actually an exciting and even dangerous adventure. To be an empirical psychologist in the seventeenth century required courage. It meant challenging the wisdom of the ages. It meant asserting that the only resources that man has for the discovery of truth lie in himself. When one thinks of John Locke, David Hume, and the eighteenth and nineteenth century associationists, one should think of them as rugged, daring, tough-minded pioneers, who were

asserting not merely the rights but the potentialities of man. I think they were wrong in their psychology, but they tried with a passionate sincerity to do what every scientist should do: they tried to look at the facts and to follow them whithersoever they led.

I shall not take the time to trace historically the development of the psychology of cognition. To the nineteenth century psychologist it seemed natural that in an age when the physicist was so successfully breaking down matter into its smallest components the student of mind should set as his first task the discovery of the elementary components of the mental life. Nineteenth century psychology inevitable became atomistic, and in the process it became equally inevitably mechanistic. The atoms of experience—the elementary sensations, feelings, and images, linked together and fused together in multifarious ways—could, if finally understood, provide the basis for a complete analysis of mind. How were these atoms of experience to be defined? Clearly the introspected elements would have to be correlated with the physical stimuli which elicit them and with the bodily processes which underlie them. Psychology became increasingly a matter of psycho-physics and psycho-physiology. The "new psychology" of fifty years ago laid exuberant claim to a position for itself among the natural sciences. The new psychology was to rescue the problem of cognition from the slough of philosophic speculation. The miscroscope and the chronoscope were to reduce the laws of mind to laws of nature. The processes of perception were to be finally explained in terms of sense receptor and nervous impulse.

It was part of the faith of that new psychology that every mental process could eventually be restated in terms of physiology. "No psychosis without a corresponding neurosis," was a favorite slogan. That faith included furthermore the belief that mental processes *should* be reduced to terms of their physiological counterparts, and that only in this way can we have a validly scientific explanation. This assumption had two major consequences for the psychology of perception, one good and one bad. On the one hand, it fostered the development of methods of precise observation and measurement which have led to a closer co-ordination of the sciences of psychology and physiology. On the other hand, however, it tended to restrict psychological investigation to just those processes for which simple physiological counterparts could be found, and by implication to brush aside as of secondary importance the very phenomena which originally inspired curiosity. The central problem of the psychology of perception is to explain how it is that we become aware of the things, the events, and the relationships which constitute the stuff of the world as we experience it. The psychologist in his desire to be accepted in the fraternity of the natural scientists almost lost sight of his original objective. The ultimate problems of cognition were becoming gradually obscured by an ever-thickening veil of sense-receptors and

nerve-fibres. Psychology was indeed in danger of subsiding into physiology.

I cannot in honesty assert that this danger is entirely past, or, for that matter, that the absorption of psychology by physiology would be such a terrible calamity, that is, if the scope of physiology were to be extended correspondingly. In fact there is today a steadily growing subdivision of biological science which can be termed with equal correctness physiological psychology or psychological physiology. It is a matter of small consequence what it is called or in which family it resides, so long as it is properly nourished. There are, however, two points which must be emphasized in this connection: first, in spite of our impressive physiological jargon, there are no physiological facts or principles, or even respectable physiological hypotheses, which are capable of accounting satisfactorily for anything more than the simplest phenomena of consciousness; and there is no likelihood that in the near future this situation will be substantially altered. Secondly, even if we were able to find a physiological counterpart for every psychological variable, and it is our faith that this will ultimately be possible, this would not necessarily constitute a complete scientific explanation. It is a common assumption, I know, that the proper way to explain the phenomena of any one science is to reduce them to terms of the next science on the list. Thus psychology would be reduced to physiology, physiology to biochemistry, biochemistry to physical chemistry, physical chemistry to nuclear physics, nuclear physics to mathematics, mathematics to what? I suppose to psychology, for mathematics is but a way of thinking. But I am sure you will agree with me that the merely reductive view of scientific explanation is not fully satisfying. Reduction is only part of the story, and it is now a truism that in reduction something is usually lost. We all recognize in actual practice that the various sciences represent different levels of description, possibly of the same ultimate reality, and that the primary task of each science is to find the order in the phenomena on its own level. To explain is by definition to make clear, to render intelligible. In our attempt to explain a set of phenomena it is sometimes helpful, but it is not always necessary, to relate them to the phenomena of a neighbouring science. For each science, if it is to be a science, there must be the possibility of a conceptual integration, the establishment of principles and regularities, if you like, the discovery of laws, which are appropriate to its own level.

What then is the level on which valid psychological analysis can take place? I submit that, so far as the processes of perception are concerned, this is what we may call the phenomenal level (4). I am using the word phenomenal in its correct sense, that is, pertaining to appearances. Disregarding for the moment the question as to whether there is a "real" which corresponds to the phenomenal, it should be clear that basic to any consideration of the validity of knowledge there must be a prior

study of phenomena as such, the attempt to describe, to classify, to relate to one another the data of immediate experience. Every other science begins with phenomena, but tries as rapidly as possible to escape from the phenomenal level. For psychology, it is the phenomena themselves which constitute the first object of inquiry.

I hope that I have made it clear that I am not disparaging psycho-physics and psycho-physiology. It is part of the task of psychology to establish the relationship between the phenomenal on the one hand and the physical and the physiological on the other. But to establish a valid correlation we must first have independent definitions of the variables to be correlated. It would be utterly unscientific merely to look for the psychological counterparts of known physical and physiological processes, and then to assert that we have reduced the psychological phenomena to terms of physics and physiology. The simple fact is that psychological analysis reveals variables for which there are no known physical or physiological counterparts. These variables merit study in their own right.

As we review the experimental psychology of fifty years ago, we can see how it slipped into the error of trimming its problems to fit a narrow conception of scientific method. In terms of the theory of perception the result was that the very phenomena which give rise to the central problem of perception were discarded as secondary or illusory because they were irreducible to terms of physics and physiology. I refer to what we might call the meaningful organization of experience. The percepts of everyday life are tables, trees, landscapes, people. They are oriented in space and time. They are attractive, repulsive, threatening, friendly. We cannot find any simple physiological counterparts for things and properties of this order. We think we can specify the process, in the receptor at any rate, which corresponds to a tiny patch of colour or to a tickle or a sour taste. But we have no right to accept the latter as the basis of perception and relegate meaningful organization to the limbo of the scientifically intangible. Even the philosophers, who ought to know better, frequently speak of a percept as being composed of certain primary meaningless sense-data upon which are superimposed certain secondary meanings. Yet there is nothing more tangible than the table or the tree, nothing more visible than the landscape or the face of your friend. These *are* the data of perception. These are the stuff of the phenomenal world, the world that we actually live in. The hypothetical original meaningless sense-datum is a convenient fiction, but it is a fiction rendered necessary only by the reductive bias, the assumption that only those phenomena are valid for which we can find direct physical and physiological cor-relates. If we free ourselves from this bias, we can proceed with a study of the phenomenal world unencumbered by a set of postulates which cramp and confine us.

And thus liberated, we find the study of perception endowed with

a new vitality. We find the whole panorama of things, events, and re-
lationships as we perceive them unfolding before us as something to puzzle
about, as phenomena with their own implicit regularities, their own laws.
I cannot, without becoming technical, discuss the new problems which
emerge, for instance, in the psychology of space perception or colour per-
ception when we begin to look at phenomena as they actually exist
rather than at insignificant parts of the phenomena which have been
selected in terms of a prior bias. Suffice it to say that what a few years ago
seemed to be a relatively complete chapter of psychology is now being
rewritten. Even the old and well-established problems, the perception of
space, time, sensory qualities, just noticeable differences, and so forth,
are now crying for further investigation.

But there are also problems which have scarcely been touched by the
experimental movement. In a recent book an eminent Belgian psychologist
dares to treat causality as a problem of perception (7). From time im-
memorial we have dealt with causation as an abstract concept which only
the metaphysician is competent to discuss. But the causal relationship,
however we finally interpret it, is also a part of the texture of immediate
experience. It belongs to the realm of phenomena, and as such must be
studied. A few years ago an American psychologist published a piece of
experimental research on the perception of personality (1). We tend to
think of personality as something we possess, or as a characterization of
what we are. But it is also something we apprehend, highly complex it is
true, but still phenomenal, a problem for perceptual study just as truly
as is the problem of colour. What are the laws which govern the way in
which another person appears to us? What determines our apprehension
of emotional expression, of intelligence, of mood? The psychology of
personality contains great gaps which must be filled by perceptual
analysis.

We find a challenge to perceptual study even in a field which down
through the ages has almost always been barred to the experimentalist. I
refer to that teasing problem, the nature of the self. What is it that is
concealed behind the word "I" or "me"? There is the transcendental self,
the pure ego, the knower who can never be known because no one, in-
cluding himself, can ever observe him. The philosophers worry about him,
in volume after volume, and will continue to worry. But there is also, as
William James pointed out (3), an empirical self, the self that *can* be
observed. The word "I" represents a palpable reality, a set of phenomena
which can be described and experimented with not as easily but just as
validly as can the phenomena of vision or hearing. Your self is a natural
fact. It is tied down to the perception of your own body. The whole
pattern of yourself may change as a result of fatigue, the action of drugs,
a local injury, or the amputation of a limb. Surely the self as an organized
percept is worthy of closer study than has been accorded it! But there is
a good deal more to the empirical self than the body percept. The out-

standing characteristic of the self is that it participates in motivation. When we desire or fear there is a complex relationship between the self and something that is not self which requires a more dynamic language than that of traditional perceptual theory. In the psychology of motivation we have to postulate forces which are generated, directed, regulated, and dissipated. Yet these very dynamic terms—attraction, repulsion, wishing, intending, yielding, and so forth—which signify events in time, also have their phenomenal counterparts. They represent states of the object and states of the self which must be analysed as percepts before we can have a sound basis for motivational analysis (5).

II

May I turn now to a second of the new psychologies? Although Sigmund Freud had begun as early as 1900 (2) to develop in systematic fashion his revolutionary theories of human conduct, it was not until the decade after the First World War that psychoanalysis began to catch the fancy of the public and to qualify as the current "new psychology." The experimental psychology of that period had begun bravely, as we have seen, but it had been hypnotized by the glitter of brass instruments. As it allowed itself to conform more and more to the pattern of the physical and the biological sciences, it began to lose its appeal. For the common man who sought to understand himself and other people there was little comfort in a learned disquisition on sensations, reaction times, and the probable error of a psycho-physical judgment. The psychology the scientists were writing bore no relation to life.

And then Freud appeared. At first he was just a name, to be mentioned in a whisper. Freud was the man who explained everything in terms of sex. Such a theory could not be correct, of course; it was simply not decent. But it was pleasantly shocking; and it gave one a gratifying feeling of sophistication to be able to discern sinister meanings in the slips of the tongue and the dreams of one's respectable friends. Freud was spurned by the academic psychologists, was condemned as a charlatan by the medical profession, and was denounced from the pulpit as a menace to morals and religion; but he continued to investigate and to write, and people began to read his books. In spite of the stodgy academicians, the influence of Freud spread rapidly until, during the twenties and early thirties, psychoanalysis had become a movement with many of the characteristics of an evangelical religion. It had its canonized founder, namely Freud himself, whose every word was studied with the devotion of talmudic scholarship. It had its jargon, which vied with the best the theologians could provide; it had a ritual tinged with the glamour of the occult; and it had its apostolic succession. There are few who have been analysed by Freud himself, but if you wish to be analysed properly you must at least find an analyst who has been analysed by someone who

was analysed by Freud. Small wonder, then, that the Freudian movement
became the "new psychology." Psychoanalysis may never have become
completely respectable; but it has at least become fashionable. For the
modern lady of leisure the analyst now ranks with the hairdresser and the
beauty specialists as an indispensable aid to gracious living.

It is all too easy, however, to poke fun at the Freudians. As in the
case of so many religions, the message of the master has to be disen-
tangled from the theology of the disciples. Freud actually did give a
significantly new twist to psychological theory; and, strange as it may
seem, the real genius of his contribution has nothing to do with his sexual
theory as such. Freud was trained in the biological sciences. His first
publications were in the fields of physiology and neurology. When his
interest turned to problems of neurotic behaviour, however, he concluded
that the neurophysiological approach was inadequate. While the orthodox
psychologists were still struggling to co-ordinate elementary sensations to
receptors and nerve-fibres, hoping that some day this would lead to a
scientific psychology of motivation, Freud impatiently discarded tradi-
tional concepts and methods and sketched out a theory of motivation in
purely psychological terms. We cannot find the motives of men, he held,
by peering into the brain. If we are to understand why people do what
they do we must search rather for the unconscious urges which are ex-
pressing themselves *through* behaviour. Our thoughts, our perceptions, our
actions, become intelligible only when we understand them as disguises
which cloak the real forces of human nature. Freud blocked out a whole
new conceptual scheme within which human behaviour was to be ex-
plained, and it bore no necessary reference to the conceptual scheme of the
biological sciences. The unconscious, a realm with no spatial dimensions;
the libido, a force which operates from no localizable point; repression,
sublimation, symbolization, mechanisms with no detectable machinery!
Granted such postulates, and the meaning of life could be laid out with
convincing clarity. Freud needed no test of the validity of his system
other than the inner consistency of its logic and its practical value in
application.

To many of us the Freudian system is far from satisfying. We dislike
concepts which are impregnable because they are intangible, and we
should like to see the pragmatic test applied with greater scientific rigour.
For us the Freudian theory must remain a brilliant and courageous
attempt to grapple in a new way with the problems of motivation. As
such, however, it is a challenge to psychological investigation. Freud's
"new psychology" has become the basis for a new interest in the dynamics
of behaviour. We have been trying in our perceptual studies to be
scientific about the "what" of human experience. Can we also be scien-
tific about the "why" of human behaviour? Can we bring the methods and
the point of view of science to bear on the needs, the impulses, the
purposes, and, ultimately, the values which direct and regulate our con-

duct? I doubt if there is any problem which looms larger in the thinking of psychologists of today.

The first modern attempts to study motivation experimentally involved the use of animals. At the turn of the century the doctrine of evolution was in the air, and it seemed reasonable to assume that, just as man's bodily structures could be linked with their counterparts in the animal world, so the springs of human conduct could be traced back to the more primitive motives of our animal ancestors. We were presented accordingly with a biologically oriented theory of motivation, most cogently formulated by William McDougall (6). If we are to understand why people do what they do we must look to the animals, for there we shall find in purer form the simple instincts, to fight, to escape, to submit, and so forth, which govern our own conduct. McDougall has been grossly misrepresented, and I shall not join the horde of uninformed critics. Suffice it to say that when his theory was rejected it was replaced by others which, it seems to me, suffered from almost exactly the same defects.

The biologically oriented theories of motivation are correct in their insistence on the relevance of our evolutionary heritage not only to our bodily structures but also to our behaviour. Human nature belongs in the larger category of animal nature, and we can learn much about human motivation from the study of animals. It is completely incorrect to argue, however, that therefore a list of animal instincts, or drives, or needs, or whatever the current term may be, can give us the key to the understanding of why people do what they do. Human warfare and animal fighting, human love and animal mating, are linked together only by the crudest of analogies. It can be maintained, although I should deny even this, that primitive biological drives constitute the genesis of human motivation, but at best this gives us a distorted and, in my opinion, a false picture of human behaviour. A hog may feed on garbage, but this does not mean that when we eat pork we are eating garbage. A multitude of transformations have intervened.

This tendency to reduce behaviour to terms of primitive, biologically defined components might be considered as an aspect of another "new psychology" which for a while gained the spotlight, namely behaviourism; but time forbids its consideration here. Behaviourism almost reduced psychology to the study of rats. Fortunately we have been rescued, and much of the credit goes to Freud. Freud's psychology is definitely a human psychology. Whatever we may think of the Freudian theory, we must welcome his fresh and paradoxically courageous insistence that if we are to understand the motives of men we must make, not rats, but man as he is, the focus of our study. Man as he is, is a complex being who hates and lusts and is frightened, but who also spins theories, writes stories, paints pictures, and builds empires. The study of man cannot be limited to the simple reactions which can be measured in a laboratory; it must include his goals, his aspirations, and his cultural creations.

I always find it difficult to pay an adequate tribute to Freud without appearing to endorse his point of view. The statesman who gives us hope and courage during a time of peril is not necessarily the proper leader for an era of reconstruction. Freud has refocussed our attention on the essentials, but I do not think he has solved our problem for us. In fact, I find in the Freudian theory a bias as dangerous to a constructive psychology as is the bias of the animal laboratory. Freud's basic data come from the clinic. He studied, first and foremost, the people who have failed to adjust themselves to their society, the twisted, frustrated, anxious personalities who have not succeeded in finding peace. We can learn much from the study of people who go wrong. The wise man can discern in error the pattern of truth, if he has already some standards of truth. But if he concentrates exclusively on error he may come to the conclusion that there is no truth. I am prepared to believe that every psychological abnormality is intelligible in terms of psychological law, but to derive our psychological concepts and ultimately our psychological principles primarily from the study of the abnormal would be dangerous indeed. And this is precisely the direction in which the Freudian emphasis is leading us. It leads us to think of people in terms of the ways in which they are likely to go wrong, in terms of the kind of insanity they will develop when they go insane. Conflict, frustration, repression, compensation, sublimation, these are all legitimate psychological concepts; but we should think of them, not merely as the causes of neurosis, but as processes essential to the development and maintenance of a normal, healthy personality. Without conflict we would not be persons, but surely as persons we are more than the battered remnants of early childhood frustration.

As I see it, then, the challenge to us today is to develop a psychology of motivation which takes as its point of departure, not the neurotic, but the normal human being at his best. We can learn from the clinic; we can learn from the animal laboratory; but we shall not learn the true story from these sources. Why do men fear? Why do men hate? This is one way of asking the question. But it is more important to ask: What gives man courage? What is the secret of the life that is free from hate? How does man achieve the inner strength that makes him invulnerable to attack? Man at his best is the greatest wonder of the natural world. Man at his best is capable of heroism, self-sacrifice, devotion. These are not scientific terms; but surely we cannot look at the great men of history and at the unsung heroes of the factory, the farm, and the home without realizing that here are problems of motivation which should tease the curiosity of the scientist.

III

And now for the "new psychology" of today. So far as I know, no one has labelled it as such, and I doubt whether any books will bear the title.

Yet we have a new movement, brought to a head by the war, which displays all the enthusiasm of the new psychologies of yesterday. Its orientation is social. Until recently social psychology was an illegitimate child, borrowing data from the other social sciences but attempting to maintain its integrity as a science of the individual. It had no data and no methods of its own. It talked of institutions, associations, mores, and the like, which are sociological concepts, and it tried to explain them in terms of instinct, imitation, or learning. The textbooks of social psychology have been for the most part uninspired conglomerations of a little anthropology, a little sociology, and a great deal of more or less irrelevant individual psychology.

The barrenness of this social psychology was brutally exposed during the war. Governments were suddenly faced with the task of expanding industrial production, of moving populations, of enforcing regulations which affected the daily lives of millions of citizens; and they had no way of knowing exactly what resistances they would meet, what kind of appeal would receive the readiest response from what population, or in what terms a regulation was to be justified if it was to be accepted. Should a pay-roll deduction plan, for instance, be presented as an anti-inflation measure, as a way of saving for the future, or as an index of patriotism? The facts were simply not available. The military strategists knew something of the value of psychological warfare. But what kind of propaganda should be directed against the enemy? How could one tell in advance whether a particular propaganda trick would tend to stiffen or to weaken resistance? Should the same type of propaganda be directed against different enemy countries? The psychologists did not know the answers.

The practical needs of the war thus forced a reorientation of social-psychological research. From the point of view of government policy or military strategy it is relatively unimportant whether or not heredity is more potent than environment, whether or not cultural transmission can be explained in terms of the conditioned response. What is important is that we have some way of accurately assessing the state of mind of people as they are. Man's behaviour in society is regulated by his beliefs, his prejudices, his loyalties, his opinions. These are the psychological counterparts of his culture. Let us call them, broadly, his attitudes. Is there any way in which we can develop a science of attitudes, describing them, studying their growth and change, measuring their intensity, and eventually predicting and controlling them?

We have as yet no such science. For a brief period, it is true, the spectacular successes of the public opinion polls in predicting election outcomes led many to believe that social psychology had finally found its instrument; and the application of polling techniques in the commercial world was bringing financial rewards unparalleled in the history of

psychology. So great was the enthusiasm that it began to look as though any problem of social psychology could be solved, without benefit of detailed and painstaking research, by a judiciously framed questionnaire. Then came the catastrophe of November, 1948, puncturing the arrogance of the pollsters and demonstrating, to the satisfaction of the uncritical, that the study of public opinion can never be a science. Social psychology's proud new instrument had failed.

Like so many failures in the history of science, however, this must be regarded as a healthy failure. It did not demonstrate, as some have gleefully concluded, that a brilliant hunch is more reliable than a scientific calculation. What it did make glaringly clear is a fact which the more cautious social scientists had been pointing out for some time, namely, that a method which successfully predicts behaviour in a relatively stable psychological field is not sensitive enough to plot the determinants of behaviour when changes in cognitive clarity and motivational stress have been introduced. If we are really to understand people, we have to get behind their hastily verbalized opinions to the implicit assumptions, the unrecognized prejudices, the half-articulate attitudes which give meaning to the world as they apprehend it. The polls as we know them cannot do this; but there is no reason why a rethinking of the problem should not lead to an improved technique. In the 1948 election polls there were sampling errors, interviewer bias, and grave miscalculations on the part of the analysts, all of which can be corrected. The real failure was a failure of psychological insight. Sampling, interviewing, and analysis all depend on hypotheses about the structure and dynamics of the person. The theory of attitude measurement must be brought back into the mainstream of developing psychological theory. An attitude is both a cognitive structure and a dynamic relationship. If we can finally combine in a single procedure the sensitivity of experimental and clinical analysis with the statistical controls of the public opinion poll, we shall have an instrument which will enable us to peer in a way never before possible into the mind of the masses.

This is the hope that steers a great deal of current investigation in social psychology. It is a hope supported by a newly awakened realization on the part of psychologists that if their science is to fulfil its mission it must come to grips with the problems of man not merely as an individual in isolation but as a member of society. One need not repeat what is now becoming almost a trite argument, namely that the threat to human survival today lies less in the release of new sources of physical power than in the fact that this power is controlled by human beings who have not yet mastered the most elementary techniques of co-operative living. This fact, we all realize, places an enormous burden of responsibility on the shoulders of all the social sciences. Part of this burden must be accepted by social psychology.

From the psychological point of view one simple and obvious observation is that much of our insecurity stems from our inability to understand one another. In a very real sense every person lives in a world peculiar to himself. Two people may apparently speak the same language but fail completely of mutual understanding because the same words mean different things to each. To understand another person means not to impose the structure of one's own thinking on the other person's world, but to gain insight into the way in which his world is actually structured. In our perceptual studies we have learned to some extent how to do this, how to reconstruct the world of the blind person, for instance, so as to understand how the ordinary objects, events, and relationships of immediate perception must appear to him. In our motivational studies we are beginning to understand the conduct of people who differ radically from ourselves, so that even the strange behaviour of the psychotic becomes partially intelligible to us. Can we carry the inquiry further, so as to gain insight into the social attitudes not only of individuals but of groups? Political ideologies, economic threats, ethical codes, religious faiths, these will continue to be unknown and uncontrolled factors in the social field until we have succeeded in getting behind the words to the attitudes, until we know what they represent in the world that people really live in.

IV

And now for a word of conclusion. This has been a drastic over-simplification of history for the purpose of making a case, and you will recognize, I am sure, more than a little of my personal bias. If I have appeared to ignore many a movement which in its day has merited the term "new psychology," the so-called schools of psychology, for instance, or the mental testing movement, or the mental hygiene movement, I have done so not merely because I lack the time and the competence to treat them properly, but also because there are two main points which such a discussion might obscure.

The first of these points has to do with the nature of psychology as science. I believe that the essential thing about a science is not its particular techniques of investigation, nor the degree of precision with which it measures, but the significance of the problem it attempts to solve. If the scientist allows his research to be dictated merely by the available methods, his science as such is doomed; it becomes merely a technical game. The problem should always come first. If the central problem is clearly envisaged, it will eventually dictate the appropriate method. Far better a groping, admittedly inadequate investigation of something important than a neat, precise study of something inconsequential. We have seen how psychologists, in the attempt to become

technically respectable, have come dangerously close to losing sight of their central problems. Psychologists, too, have frequently found it easier and more profitable to apply a few apparently established techniques than to continue the quest for further truth. I have no quarrel with the application of psychology to practical affairs. May I express my conviction, however, that this emphasis should always be kept secondary? Psychology is too young a science to rest content with its present methodology or its present knowledge. The great problems are still with us, unsolved. Let us not lose our curiosity!

My other point has to do with the nature of these problems themselves. The three areas I have selected—perception, motivation, and social attitudes—represent, I think, three of the major interests in modern psychology. They are rooted in man's age-old interest in the problems of epistomology, of ethics, and of politics. Yet in recent history they have emerged as "new psychologies," each claiming uniqueness, and they threaten to present us with three different types of psychology and to create three different types of psychologist. Even now the experimentalists, the clinicians, and the social psychologists are in danger of becoming three mutually exclusive groups of people who have lost the power of communication with one another. We see evidence of this at every major meeting we attend. It is a regrettable development, not merely because disunity is a bad thing, but because it indicates a failure on our part to penetrate to the core of our own subject. I have tried to show how when we push the study of perception far enough we find ourselves, without having crossed any boundaries, engaged with problems of motivation, how the study of social attitudes leads us inevitably to the problem of cognitive structuring, in other words to the heart of the psychology of perception. The words, "percept," "motive," and "social attitude" represent merely different ways of designating facts and relationships which exist in the same psychological field. There is, in truth, a unity to our science. Just now we may find this unity merely in the common focus of our curiosity. Ultimately, I believe, we shall be able to express it as a unified set of principles.

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THE SOCIAL, AS DISTINGUISHED FROM THE BEHAVIOURAL, FIELD[1]

H. W. WRIGHT
Kitchener, Ontario

Psychological studies of the clinical interview indicate the need to extend field theory which has proved helpful in the experimental investigation of behaviour, to the social field, and to recognize a distinctively social field of inter-personal communication. Professor T. M. Newcomb, in a notable address,[2] marshals evidence from many sources including the writings of Rogers, and of Horney along with other leading psychiatrists, in support of the view that personality disorders spring basically from interference with inter-personal communication. With neurotics generally, it is not, as he points out, the exchange of words and gestures that is prevented but rather of *meanings* which is the essence of communication. The final goal of psychotherapy is, he holds, to enable the patient to communicate without distortion with members of his social group.

Effective communication, be it noticed at the start, does not necessarily carry with it agreement in opinion or purpose. It signifies no more (and no less) than the exchange of meaningful experience with mutual understanding. Such exchange is, however, the very bed-rock of distinctively human association. Men may disagree in belief and in aim but still understand each others' views and how they are reached. Likewise, communication without distortion does not mean communication without disagreement in belief or that conflict of purpose which is frequently tied up with such disagreement. It is not surprising that psychologists, principally concerned with socially deviant behaviour, should have neglected this distinction. Because they have done so, Newcomb's paper has special interest and value. For him, communication without distortion signifies, not communication without disagreement or deception, but communication without misunderstanding.

In order that two-way communication shall take place, the communicants must share in a common system or world of meanings. Thus the fact of communication forces the problem of meaning upon the attention of psychologists. I say "problem of meaning," because it took fifty years of experimental work to convince psychologists that a human being responds to a stimulus not as a physical event merely, but according to the meaning which it has for him as an individual. But to admit that the individual responds to the meaning which the stimulus object or situ-

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[1]Paper read at the Annual Meeting of the Canadian Psychological Association, Montreal, May 26-8, 1949.

[2]T. M. Newcomb, "Autistic Hostility and Social Reality" (*Human Relations*, 1, 1, 1947, 69-84).

213

ation has for him appears to deprive the stimulus-response formula of that objectivity which has commended it to psychologists, since meaning is always a product of individual experience, and is therefore tainted with subjectivity. Hence the unfortunate psychologist is once more in a dilemma, a situation not unfamiliar to him.

The most helpful methodological concept as yet devised for dealing with this problem of meaning is that of the field. The field is the objective configurational context which gives meaning to the stimulus. Because the field of perception and of action is a spatially extended region in which one event determines another, it is external to the responding individual. Yet at the same time the field is not external in the sense of being outside the skin of the percipient, since its content and organization are determined by the goals and goal-seeking activities of the human organism, and the conditions, natural and social, of human need-satisfaction. Such is the behavioural world of Koffka and with certain important additions, the psychological field of Lewin. It is the world of common perception, and of phenomenological experience, yet is not entirely identical with this latter, since it is a world of objective experience, as distinguished from the private world of feeling and fantasy, a distinction which Köhler held to be of cardinal importance.

What I wish to show is that the psychological explanation of meaningful communication will be greatly assisted by the recognition of a distinctively social field. If such a field exists, it may be expected to possess in its own way, *field properties* analogous to those of the behavioural world. It must (1) be in some actual way external to the individuals engaged in communication, (2) have a characteristic content, related to the aims and subject-matter of communication between these individuals, (3) be organized so as to make possible and facilitate inter-personal communication, and (4) impart objective validity to the meanings communicated. As we shall now see, the social field does have a definite structure exhibited in the four features of externality, distinctive content, organization, and objectivity.

EXTERNALITY

Externality is conferred on the social field, not by the geography of the natural world as in the case of the behavioural field, but by man's bodily organs of speech and expressive movement, along with the physical instrumentalities through which their range is extended. Vocal sounds are physical events, written or printed pages are physical objects equally external to, and perceptible by, all individuals. Speech habits are obvious mechanisms of social interaction. Their primary function, taken account of by all psychologists, is to influence the behaviour of others with whom the speaker is in stimulus-response interaction. But language has another and a second function indispensable to human life and association, which

is to serve as an instrumentality for the communication of meaningful experiences as between individuals. In this second function which has been strangely neglected by psychologists, language gives externality to the social field.

CONTENT

The social field is composed of the group of inter-communicating persons, along with the objects and events to which the ideas and opinions, the attitudes and purposes they express, have reference. These objects are not the items of sense perception originally presented in the perspective and place-time setting of a particular percipient, but rather those conceptual objects which are subject-matter for report, discussion, and social criticism. They are objects classified and defined by essential and distinctive properties and symbolized by names assigned in common speech. An object which is perceived by one person and reported to others, or is perceived and discussed by several observers is recognized as to kind and identified by name. What properties are taken to be essential to the meaning of an object and employed in defining and naming it, depend largely on the governing life-interests of the group, economic, familial, political, and so on.

Included then in the social field are persons, their individual characteristics and institutional relationships, geographical and climatic features which bear upon the well-being and prosperity of the group, diverse occupations with the materials used, methods followed and results attained, habitations and household equipment, weapons, tools, and a great variety of other things and activities. Inter-personal communication is of course concerned with values as well as facts and these have their place in the social field: with the desirability of goal-objects, with the rightness and wrongness of actions, with the truth and falsity of beliefs, with what is admirable and despicable in character and conduct, with differences in the worth and status, the power and prestige of persons, relative to the roles they undertake in the institutional organization of the social group.

ORGANIZATION

The social field has its own distinctive organization. While the behavioural field is organized to suit the needs of goal-seeking activity in the natural world, the social field is organized to meet the requirements of meaningful communication in the social world. The social field takes form and order from the consecutive talking together of successive generations of group members. If individuals are to get their ideas across to others, and to understand what they mean to say in reply, both they and others must in their talk comply with the elementary requirements of logical consistency. The words they exchange must retain their

identical meanings from time to time, and from person to person, and the grammatical forms which link words together in consecutive discourse, must continue to signify the same relations of affirmation and negation, inclusion and exclusion, agreement, opposition, dependence, and so on. It follows, therefore, that the social field, with respect to the properties and relationships of the objects which compose it, and to which all meanings refer, must possess a degree of logical coherence. Otherwise, it would not be what it is, a world of rational discourse.

Within this logical framework, the specific objects, events, and processes which make up the social field are functionally interrelated within the culture pattern of the group. Such patterning of institutions, mores, and beliefs, is primarily determined, no doubt, by the economic conditions of group survival and prosperity. But not all social roles are related to, or dependent upon, the natural conditions of self-maintenance. As Gardner Murphy affirms,[3] on the strength of Bateson's researches, some roles are induced as group-reactions to the meaning of other roles, for example a pronounced masculine role may evoke by virtue of its own meaningful character an opposite and complementary feminine role, or dominant behaviour on the part of an individual or class may induce submissive behaviour in other individuals or classes, partly or wholly because of its own intrinsic character. Bateson also finds that even primitive cultures have an *eidos,* consisting of standardized modes of thinking, a system of logical schemata which supply reasons for the emphases and preference in the culture.[4]

OBJECTIVITY

The social field possesses objectivity because the articulated ideas which signify or mean it have withstood social examination and testing, and have received social confirmation. Communication enables individuals to discuss their observations and opinions with others, to defend them against attack, and to understand and agree to the social verdict. To be sure, not all ideas which gain social acceptance are true, nor do the objects which they signify necessarily exist. The standards by which individual belief and opinion are interpreted and evaluated are to some extent inherent in the common intelligence of mankind and, to that extent, lead to objectively valid conclusions. But they are also in part supplied by the culture of the group, and are subject to all its limitations in the way of deficient information, misplaced emphasis, and group autisms. In spite of this, the social field has an objectivity which places it on an entirely different plane from the private world of the hebephrenic with

[3]Gardner Murphy, *Personality* (New York: Harpers, 1947), 788-91.
[4]Gregory Bateson, *Naven; a Survey of the Problems Suggested by a Composite Picture of the Culture of a New Guinea Tribe Drawn from Three Points of View.* (London: Cambridge University Press, 1936), 118ff.

his compelling hallucinations or of the paranoiac with his organized delusions. In the objects which compose it and the relations which organize it, the social field represents the net result of the group discussion and appraisal of individual experiences which have gone on for many generations. Also, it is generally the case that a small minority does not accept as final the social rejection of their views. On the strength of their own observation and practice, they hold to the truth of their own interpretations. Yet even such dissidents accept in considerable measure the socially accredited system of meanings. Else how could they make their own heretical opinions intelligible to their fellows, and how understand the opposing views of their critics well enough to argue against them? Of course, radical and continued disagreement, particularly if followed by social ostracism and isolation, may lead the deviant in time to build up a private world, distorted and meaningless to his fellows. When this occurs, the deviant does indeed cut himself off from the social world, and the community of human intelligence.

CONCLUSION

The social field is the necessary correlate of inter-personal communication. As a world of objects, empirically and logically interrelated, and verbally symbolized, it is the external counterpart of that system of meanings in which all communicants must participate. Only through such participation can the individual come to view his own life and behaviour objectively, in terms of socially reported and authenticated experience. Thanks to it, he is able to see himself somewhat as others see him in the light of common knowledge and acredited opinion, and to keep his expanding ego-image within the bounds of sober fact. Communication, once established and maintained, is the sole corrective of childish ego-centricity, and the source of that insight which the psychiatrist regards as the minimal mark of sanity. Conversely, communication is that which enables the human being to conceive, and take account of, individual differences in personal outlook, preference, and desire. All persons reared in the same culture and speaking the same differentiated language, live and act in the same social field, despite endless individual differences in attitudes, interests, and goals. The social field bridges the gulf between individualities, making it possible for one person to understand the tastes, wishes, and aims of others which are very different from his own, in terms of goals, activities, and satisfactions which are recognized and defined in the social world common to all. Thus it lays at least a foundation for mutual respect in the face of disagreement, and encourages the feeling of human kinship which is some protection against the grosser forms of prejudice, suspicion, and hostility.

MEANING, MOTIVES, AND SOCIAL ORGANIZATION[1]

J. D. KETCHUM
University of Toronto

A SALIENT feature of the psychological scene today is the rapid movement away from atomistic and mechanistic theories and towards organismic and phenomenal ones. Wheeler assures us that this is merely the latest in a long series of such alternations, observable in all scientific thought since the time of the Greeks.[2] If that is so, the younger psychologists present will some day be able to look back at their enthusiasm for the phenomenalism of the 1940's with the same tolerant, middle-aged smiles with which we elders recall the wild oats we sowed in the company of John B. Watson.

Such an outcome seems the more likely when one explores the causes of the present shift in orientation. Due weight must be given to the difficulties encountered by behaviourism in dealing with complex behaviour, especially social behaviour, and to the powerful yeast of Gestalt theory, which has been working for more than thirty years. But the immediate impetus seems to have come from another direction. The past decade has seen an unparalleled growth in the *application* of psychology to real-life situations, military, industrial, clinical, and so on; and the practitioner in such fields, unlike the teacher or pure researcher, is driven to operate at a molar level, where units of analysis are large and complex, and mechanistic theories appear irrelevant. New applications of a science always affect the science itself, and it was inevitable that the movement which is filling our graduate schools with embryo clinicians should in time generate a congenial theoretical framework.

One striking symptom of this shift in emphasis is the reappearance in psychology of "meaning," a term which made the good behaviourist shudder. Projective tests, frankly focussed on meaning, are driving out more objective instruments, and we find ourselves inquiring what the ink-blot "means" to the patient, what the job "means" to the worker, and even what the maze "means" to the rat.

Meaning is a unique quality of experience and I do not propose to define it. As Bartlett says, trouble always arises when a psychologist tries to say what meaning is, instead of confining himself to the conditions under which it arises.[3] Ogden and Richards were able to gather no less than sixteen different types of definition from the literature up to 1923,[4]

and current writers in social and applied psychology are probably prudent in using the term, as most of them do, without any attempt to say what they mean by it.

None the less, it is clear that "meaning" is being used today in two rather different contexts, with a corresponding divergence in connotation which is seldom explicitly recognized. I am calling these *cognitive* and *affective* meaning, and it may be worth while to examine them briefly.

COGNITIVE AND AFFECTIVE MEANING

Meaning is traditionally a cognitive phenomenon, something that must be grasped or perceived. And it involves the connectedness of experience, or, as Bartlett says, "the construction of psychological material and psychological reactions into organized settings."[3] Nothing, that is, can have meaning in isolation; the meaning of anything arises from its relatedness, its perceived context, its place in some organization or system. The behaviour of a football player, for example, is strictly meaningless apart from its spatial and temporal setting, the related activities of other players, and the rules and objects of the game. All the uses listed by Ogden and Richards appear to fall in this category.

Meaning, however, is being employed increasingly by psychologists in another sense, one which refers to need-satisfaction rather than to the perception of pattern or relatedness. This is what I am calling affective meaning; it has long been familiar in such colloquial phrases as, "I can't tell you how much this *means* to me." Sherif, for example, avoids the term where one would expect it, in his discussion of frames of reference, but later states that the objects which are meaningful to the infant "are those with biological value in terms of satisfying basic needs."[5] And Snygg and Combs assert that the meaning of an object is found in its "relationship to the phenomenal self, in the role which (it) is felt to have in the satisfaction of need."[6]

BOTH USES VALID

In the light of the term's history one might be tempted to reject the affective use as illegitimate, but that would be a backward step. For every modern writer, though he may deal with meaning mainly in cognitive terms, acknowledges the role of motivational factors in its appearance, whether by positing an active search for meaning on the part of the individual, or by stressing the effects of aroused motives on perception itself. Bartlett's schemata are primarily cognitive in character, but he notes the influence of interest, excitement, or emotion on perception,

[5]M. Sherif, *An Outline of Social Psychology* (New York: Harper & Bros., 1948), 196.

[6]D. Snygg and A. W. Combs, *Individual Behavior* (New York: Harper & Bros., 1949), 210.

and also speaks of every cognitive reaction as itself "an effort after meaning."[7] Cantril, who seems to take a purely cognitive position, treats the dynamics of social movements in terms of the "pursuit of meaning";[8] Krech and Crutchfield similarly refer to the "search for meaning," "striving after meaning," and the "need for meaning."[9] And no modern discussion of perception fails to emphasize the effects of such factors as need and emotion on the whole cognitive structure.

The affective use also rings true introspectively; at our football game we may perceive the full context and relatedness of what is occurring, but the game will still be a relatively meaningless experience to us if we have been dragged to it against our will, that is, if our motives as at present organized are not being satisfied in it. The psychology lecture "means" little to the restless student, the offer of a symphony ticket is meaningless to the starving man.

We arrive, then, at a position which is obviously in line with the present emphasis on the unity of behaviour: that meaning, like all other psychological experiences, has both cognitive and affective components, that these are inseparably bound together, and that each is indispensable. There can be no experience of meaning without some perception of relationship, of organization, but neither will meaning be fully present unless there is some reduction of tension, some satisfaction of need. The latter condition would of course be met automatically for those who assume a universal "need for meaning," but this seems an over-simplified solution. Individuals are certainly not satisfied with "just any" cognitive experience of meaning. It is probably better to say that if motives are not being satisfied directly, they may attain satisfaction indirectly through their determining effects on the cognitive structure itself, that is, on the perception of relatedness in which meaning is given.

MUTUAL INFLUENCES OF COGNITION AND MOTIVATION

Experimental studies of the selection, re-shaping, and even rejection of cognitive experience in the service of needs and emotions are now numerous and familiar; they have been well summarized by Bruner and Goodman.[10] These findings have naturally been seized upon by those who equate meaning with need-satisfaction, but they appear in some cases to have been hastily swallowed and inadequately digested.

Two points in particular seem to have been overlooked. First, that in the normal person structural factors set certain limits beyond which

[7]F. C. Bartlett, *Remembering*, 227.

[8]H. Cantril, *The Psychology of Social Movements* (New York: John Wiley, 1941), 53.

[9]D. Krech and R. S. Crutchfield, *Theory and Problems of Social Psychology* (New York: McGraw-Hill Book Co., 1948), 153, 455.

[10]J. S. Bruner and C. C. Goodman, "Value and Need as Organizing Factors in Perception" (*Journal of Abnormal and Social Psychology*, 42, 1947, 33-44).

the functional distortion of cognitive experience does not go. Levine, Chein and Murphy are among the many who have demonstrated this.[11] And secondly, that the determining effects are not one-way, but mutual. Motives admittedly affect cognition, but the content and organization of the cognitive field, with its many external references, also have reciprocal effects upon motives themselves, reinforcing, modifying, or inhibiting them, causing new needs and goals to appear. It is unfortunate that experiments have so far emphasized one side of this relationship through using motive as the independent variable, but studies of changes in level of aspiration (for example that of Chapman and Volkmann[12]) provide suggestive evidence in the other direction.

OVER-EMPHASIS ON FUNCTIONAL DETERMINATION

The above points are important because of a current tendency which seems to me dangerous, both theoretically and practically. This is the tendency, not merely to treat meaning in terms of simple need-satis-faction, but to give so much weight to the determining effects of functional factors on cognition that the structural factors present in the "real" world are reduced to relative impotence. Too much exposure to clinical experi-ence, plus an uncritical enthusiasm for phenomenology, sometimes result in a description of the individual's world as almost independent of ex-ternal reality, having a meaning derived solely from his own wishes and needs.

Krech and Crutchfield know their Gestalt too thoroughly to slip into any such pitfall, and make it abundantly clear that cognitive experience always results from the interaction of structural and functional factors.[13] Sherif's heavy emphasis on the pervasive effects of biological needs seems ominous, but he still commits himself firmly to an interactionist position.[14] Snygg and Combs, however, though touching on structural factors in certain connections, show in general a strong functional bias which will be all too readily accepted by practitioners with meagre theoretical train-ing. "At any time," they assert, "the field of a given individual is organized with reference to his needs and the activity by which he is trying to satisfy them."[15] "With reference to" is possibly an escape clause, but such statements, and there are several of them, are bound to give the im-pression that needs are the sole determinants of organization, and there-fore of meaning and conduct. This would leave us nothing but the pleasure principle, paramount and unchallenged.

[11]R. Levine, I. Chein and G. Murphy, "The Relation of Intensity of a Need to the Amount of Perceptual Distortion" (*Journal of Psychology,* 13, 1942, 283-93).

[12]D. W. Chapman and J. Volkmann, "A Social Determinant of the Level of Aspiration" (*Journal of Abnormal and Social Psychology,* 34, 1939, 225-38).

[13]D. Krech and R. S. Crutchfield, *Theory and Problems of Social Psychology,* 83.

[14]M. Sherif, *An Outline of Social Psychology,* passim.

[15]D. Snygg and A. W. Combs, *Individual Behaviour,* 25.

The Phenomenal Self

When these authors add that there is only one basic need, "the maintenance and enhancement of the phenomenal self,"[16] our misgivings are inevitably deepened. Nothing appears to be gained descriptively by lumping together all the immense variety of human needs in one sonorous phrase; and when, as here, this is coupled with a consistent over-emphasis on functional determinants, we are near the deceptive simplicity of a single-factor explanation. I have too much respect for Dr. Snygg and his collaborator to suspect them of adopting any such position, but if their interesting and persuasive book is re-read from this point of view I think the tendency will be apparent.

The phenomenal self may prove an extremely useful concept in psychology, but not if it is employed as a facile escape from dualism; standing by itself it is as void of explanatory value as the libido. We must constantly remind ourselves that the self and its needs are only part of the phenomenal field, that there are other and independent determinants of that field, and that its organization and meaning always represent a compromise between the demands of the self and those of the external world. That world appears to have structure, and the structure appears "real" by the only criteria we possess: that people show general agreement in their perceptions of it, and that we find ourselves unable to change it entirely at our will, but must in some measure adapt ourselves to it.

Social Organization and Meaning

No other aspect of the external world has such important effects on the phenomenal field of the individual as does the *social* structure that surrounds him. And only through recognizing the momentous role of social factors in experience can the problems we are discussing be seen in their true perspective. For the social milieu of the individual is, as Sherif has shown,[17] necessarily involved in the very conception of the phenomenal self, since it forms most of the ground against which that self appears as figure. Its pressures and demands are also the most obvious checks on any tendency to regard cognitive organization as a mere reflection of personal needs. And it is, finally, the prime source of meaning in the broadest sense, providing as it does both a perceived structure and also the potential satisfaction of urgent social needs.

We have long been aware that when we ask what life "means" to an individual we are actually inquiring about his social relationships, his ties with other individuals and groups, and his attitudes towards the codes and values accepted by them. The "need for meaning," therefore, is seldom the "highly derived, intellectualistic desire" which Cantril

16*Ibid.*, 58.
17M. Sherif, *An Outline of Social Psychology*, 270f.

postulates;[18] it is rather a need for the experience of *social relatedness*, in which the perception of order and pattern, and the satisfying of motives are inextricably involved together.

There are innumerable kinds of social relatedness, and each individual perceives them in ways uniquely his own. None the less, the forms and products of group life, and the experiences of individuals in connection with them, have enough in common to make some generalizations possible. The proper terms and classifications are not yet agreed upon; those employed here obviously owe much to Sherif.

FOUR AREAS OF SOCIAL RELATEDNESS

Belongingness or solidarity is obviously a basic source of meaning in the molar sense, both cognitively, through the perception of ourselves in relation to a larger whole, and affectively, through meeting the needs for acceptance and security. And under this heading I would include the experience of *mutual* dependence and support, the sense that others are relying upon us as we rely upon them. These types of relatedness give meaning to countless activities pursued in common with others, to innumerable tasks done for the sake of those with whom we are identified.

The relatedness known as *status* is equally essential if an activity or a life is to be meaningful. The individual needs a more precise orientation than that given by mere belongingness; he needs to know who he is and where he stands, he needs a sense of personal value, an "I" feeling as well as a "we" feeling. These needs are met by the differentiation of structure which all continuing groups display, and which allots to the individual a position uniquely his own. Both belongingness and status are essential elements in the self-picture; any sharp break in either, as when belongingness is destroyed by the wiping out of one's family, or status dissolved in a social crisis, brings an immediate sense of unreality, a loss of selfhood and meaning.

Status need is not usually discussed as this general need for defined social position, but rather as a need for maintaining and improving one's position in a hierarchical structure. No one will deny the pervasiveness of this motive today, but I regard it as culturally determined, a product of the break-up of established status patterns. Change of status has become so frequent that individuals are anxious about it, and the basic need for placement or orientation has been overlaid by the newer need to climb higher and thus enhance the phenomenal self. Snygg and Combs write: "Striving for self-enhancement is the basic, constant, all-pervading life-purpose of every individual, the sole motive of his every act";[19] such a statement, however interpreted, would seem far-fetched in any stable society.

[18]H. Cantril, *The Psychology of Social Movements,* 59.
[19]D. Snygg and A. W. Combs, *Individual Behavior,* 237.

The *standards* or norms by which behaviour is regulated are a third area in which the individual needs a positive relatedness to his groups. Without criteria by which to select behaviour which is "fitting" and "right" his world would be chaotic and meaningless. These standards are of course given in the codes and norms of his society as interpreted by the groups to which he belongs; they are first accepted as the price of belongingness and status, and later interiorized as integral parts of the self. Conformity to them then becomes a felt need, for they are his own standards of conduct. As such they serve to define the roles he plays in life, and it is these roles which make his behaviour meaningful to him.

And finally we have *purpose*, commonly accepted as the major factor in making an act or a life meaningful. Social relatedness is again involved here, for all our important goals are derived from the values established in our groups, from their definitions of what should be aimed at and what is worth achieving.

Though certain life-long goals obviously reflect biological needs, how even these shall be satisfied is invariably prescribed by society. When we ignore these prescriptions, as in secret drinking or furtive sex behaviour, our behaviour lacks full meaning; needs are being satisfied but social relatedness has been sacrificed. And of the other goals which men pursue, few if any could arise from individual experience; almost all are products of social life, established, sanctioned, and implanted in individuals by the processes of group living. As the child meets them in the attitudes and practices of others, they serve as points around which activity may be organized and purposes formed. Through identification they become his goals, his purposes, the driving and directing elements in his social roles, the chief integrating factors in his conception of himself.

The meaning for which we strive in life is thus not mere intellectual apprehension, affectively neutral, and still less the mere satisfaction of needs without reference to a wider context; it is a function of our intimate and complex relationships to the wider social world. Groups with which to identify ourselves, responsibilities towards them, defined positions within them, roles to play, standards to conform to, values to act upon, goals to strive for—these are what make life meaningful to us, and all require that we be incorporated in some functioning social unit.

FRUSTRATION AND THE MEANING OF LIFE

One further point should be touched upon because of its bearing on psychological practice. The mere existence of an elaborate social context does not automatically make life meaningful to the individual; he may still suffer such frustration of his needs that meaning drains away. In the case of biological needs this is proverbial, but in complex societies like our own there is also much frustration of the need for social relatedness which I have suggested. Men are isolated from intimate contacts, or

forced to associate with those who do not accept them; they are denied the status they aspire to; they face conflicting standards and seek irreconcilable goals.

It was conflicts of this sort, of course, that allowed the clinician to get his foot inside the door of psychology, and if we regard them solely from the individual point of view we shall be handing him the deed to the house. Much may be done, as we know, to establish unhappy people more securely in their present world—much, but not everything. For these conflicts ultimately derive from the multiple dislocations of a rapidly changing society, from the breakdown of standards and confusion of goals which accompany the process, and from the deadening formalism which infects social organizations which have grown too large. In other words, they reflect real disharmonies in a real social structure, not merely the distorted perceptions of maladjusted individuals.

Those who suffer from these disharmonies should be encouraged to work intelligently for their removal, rather than be subjected to a surgical operation on the phenomenal self, under non-directive analgesia. The latter, I fear, may become standard procedure if we allow the valuable lessons of phenomenology and functional determination to be abused. In such a world as ours life can be fully meaningful to very few, but if we understand the conditions under which meaning arises, we shall at least know what to aim at, for ourselves and for others.

REQUEST FOR INFORMATION

Mr. H. E. Panabaker, Supervisor of Guidance for the Calgary Public School Board, is engaged in research on the Laycock Mental Ability Test, in connection with his thesis for the M.A. degree at the University of Alberta. No reference to previous research can be discovered. Anyone who knows of a thesis or other research report on this test is asked to write to Mr. Panabaker directly, or to the Psychological Laboratory, University of Alberta.

L'USAGE DU TEST RORSCHACH DANS L'ETUDE ANTHROPOLOGIQUE D'UNE SOCIETE PAYSANNE[1]

CLAIRE MATHIEU-FORTIN

St. Anne's Hospital, Ste. Anne de Bellevue

ABSTRACT

This psychological study is only part of an anthropological research of wider scope performed on a peasant society, namely that of the people of l'Isle-Verte. The aim of the anthropologist was to study the structure of this culture in reference to an hypothetical "basic personality."

The purpose of bringing in the psychological point of view was to correlate the findings of both schools and to check the reliability of the inferences and observations drawn by the anthropologist from the cultural patterns. The Rorschach projective technique was used as the scientific instrument for the personality appraisal of our subjects. We obtained protocols from a sample of fifty subjects: twenty-four males and twenty-six females. The range of age extended from eight to seventy-nine years.

The present paper gives mainly a description of the chief character traits common to the group and highlights the idiosyncratic and role components of personality. It illustrates also the advantages of the use of the Rorschach as a means of anthropological study.

LE travail de recherche dont nous nous proposons de faire rapport dans le présent article n'est que la contre-partie psychologique d'une étude anthropologique plus vaste, entreprise dans la communauté de l'Isle-Verte, en Gaspésie. Cette recherche était dirigée par un anthropologue du Musée national à Ottawa, assisté dans son travail d'un groupe formé d'un sociologue, un folkloriste, un linguiste, et un psychologue.

L'hypothèse de travail qui guidait la recherche peut se formuler ainsi: il existe une relation fonctionnelle entre les configurations traditionnelles d'une culture donnée et les traits de personnalité typiques de ses individus. En partant de cet hypothèse, l'anthropologue élabore une "personnalité" de base qui serait le produit hypothétique de l'influence culturelle, des institutions, moeurs, et coutumes d'une société, tel que retrouvé dans les individus représentatifs de cette société. Il s'agit alors pour lui de mettre en regard cette personnalité de base et celle des individus étudiés et de mesurer le degré de concordance entre les deux, afin de justifier l'objet de sa science. Mais c'est alors qu'il doit faire appel à la technique psychologique.

En effet, l'anthropologue peut, pour les fins de sa science, déduire des configurations culturelles certaines conclusions et même y apporter le complément de ses observations subjectives des individus eux-mêmes. Toutefois il reconnaît la nécessité de vérifier la validité de ses inférences au moyen d'un instrument objectif et sûr, qui étudiera proprement l'individu.

[1]Paper read at the Annual Meeting of the Canadian Psychological Association, Montreal, May 26-8, 1949.

Le test de personnalité Rorschach répond en tout point à ces exigences. Il nous permet d'étudier l'individu dans des conditions controlées et selon une formule standardisée, et de pénétrer à un niveau plus profond de personnalité qu'une simple observation ne pourrait atteindre. Il a aussi l'avantage de fournir des données objectives que l'on peut facilement analyser et comparer selon des principes d'interprétation établis. Enfin, comme le remarquait Kardiner[2] dans son étude de la culture du peuple d'Alor: "l'expérience du Rorschach en Ojibwa a fait ressortir plusieurs traits de personnalité qui n'auraient pu être prédits par une simple intégration génétique des influence culturelles . . . le Rorschach est donc une source de nouvelles données qui ne peuvent être élicitées d'aucune autre source."

Il nous faut toutefois reconnaître que le Rorschach identifie surtout les traits périphériques de la personnalité et fournit une description structurale. De plus amples connaissances psychologiques permettront d'en tirer une interprétation dynamique. C'est ce que nous nous proposons de faire en nous servant du matériel recueilli durant notre expérience à l'Isle-Verte.

Notre échantillon était qualitativement représentatif de la population étudiée. Nous avons obtenu cinquante protocoles dont vingt-quatre chez les hommes et vingt-six chez les femmes. Les limites d'âge étaient de huit et soixante-dix-neuf ans; les sujets se groupaient ainsi:

		M	F	
Enfants	15 ans	2	3	10%
Adolescents	15 à 25 ans	7	9	32%
Adultes	25 à 59 ans	10	12	44%
Vieillards	60 ans	5	2	14%

Des trente-deux familles de l'île nous avons intervioué des membres de vingt-deux d'entre elles. Tous étaient natifs de l'île; huit sujets seulement avaient subi une influence étrangère en allant travailler à l'extérieur.

Les sujets se prêtaient volontiers à notre expérience. La motivation était très simple à obtenir; le rapport émotif entre expérimentateur et sujets se faisant tout naturellement, puisqu'il n'y avait aucune difficulté de langage et que le groupe de chercheurs était à ce moment bien accepté et familier avec les habitants de l'île. L'administration du test se faisait selon la procédure standard. Il n'était pas nécessaire d'utiliser la carte d'essai comme le pratiquait Henry chez les primitifs puisque tous nos sujets, et même les enfants, saisissaient parfaitement les instructions données. Toutes les difficultés rencontrées par les chercheurs dans des expériences similaires chez les primitifs étaient donc ici enrayées.

Les résultats obtenus aux tests se comparent en tous points aux normes de Klopfer et de Beck. Considérons d'abord l'aspect quantitatif. La

[2]Abram Kardiner, *The Psychological Frontiers of Society*, (New York: Columbia University Press, 1945), 244.

production varie de six à soixante-six réponses, la majorité se groupant
dans l'intervalle moyen vingt à quarante réponses, d'une distribution de
fréquences. Il n'y a pas de différence marquée entre les groupes d'âge
sauf une augmentation habituelle chez les adolescents et un décroissement
aussi normal chez les vieillards. Les femmes ont une légère tendance à
produire plus de réponses que les hommes. Seuls deux individus ont
rejeté certaines cartes.

Le mode d'approche marque une plus grande incidence de D, détail
obvie, que de réponses globales organisées. Les réponses aux petits détails
et aux espaces blancs sont rares et se présentent seulement chez quelques
individus.

L'étude de l'aspect qualitatif révèle une grande richesse et variété
dans les protocoles. Tous les déterminants sont utilisés; le niveau formel
des réponses est constant et très élevé. Les protocoles d'enfants ne font
pas exception à cette règle. Certains déterminants du clair-obscur tels
que le K et le FK sont moins souvent utilisés si nous nous basons sur
nos propres normes. Mais nous interprétons ce fait comme un trait culturel
puisque certains sujets moins bien adaptés en font usage spontanément.
Les nombreuses réponses à la texture et l'absence de réponses à la couleur
achromatique semblent pouvoir s'expliquer de la même façon.

Les réponses à la couleur et à la kinesthésie sont très comparables à
celles de notre propre population.

Le contenu des réponses est très varié et marqué d'une couleur locale
indéniable. Nos sujets sont très près de la nature, de la mer en particulier;
de sorte qu'on retrouve dans leurs réponses la flore et la faune aquatiques.
Par exemple, "papillon" deviendra pour eux "gibier," etc.

Les réponses anatomiques sont rares et on note la présence de
réponses sexuelles chez trois individus seulement. Ceci est assez re-
marquable quand l'on considère par ailleurs que ces gens sont très libres
dans l'expression de leurs impulsions sexuelles. Une recherche ultérieure
sur le symbolisme des réponses aux cartes ordinairement chargées de
sexualité serait d'un grand intérêt.

Nous tenterons maintenant, en nous basant sur la distribution des
déterminants dans nos cinquante protocoles, de décrire un psychogramme
commun qui conviendrait à l'ensemble de nos sujets. Nous essayerons de
l'interpréter en fonction de la personnalité de base hypothétique de
l'anthropologue.

Le groupe présente les traits de personnalité caractéristique que l'on
attribue selon la tradition aux individus d'une société paysanne. Ils sont
fondamentalement intravertis, c'est-à-dire qu'ils manifestent une tendance
schizoïde à vivre en eux-mêmes dans un monde de fantaisie qui leur
est propre; mais cette vie intérieure n'est pas créatrice. Ils ne sont pas
enclins à l'introspection et se contentent facilement de vivre au jour le
jour. Toutefois les vieillards manifestent une tournure d'esprit plus philo-
sophique.

Ils ont aussi un sens esthétique très affiné et chez quelques-uns celui-ci prend presque la forme d'une participation mystique avec la nature. Ils conservent l'attrait infantile du merveilleux et du fantastique. Ce trait se combine de façon paradoxale à un sens de la réalité très développé. Bien que pratiques ils ne sont pas terre-à-terre. Ils ont un jugement pratique très sûr qui s'appuie sur le principe de réalité. Mais ils s'élèvent au-dessus des préoccupations quotidiennes pour se retrancher dans leur monde intérieur. Sans atteindre l'excès de la confabulation ils enrichissent et colorent le monde et la réalité extérieure de sorte qu'ils n'en restent pas prisonniers.

Ils ne manifestent aucune évidence d'anxiété névrotique. Ils sont optimistes et les sentiments d'appréhension ou d'insécurité leur sont étrangers. Seuls deux ou trois individus expriment un sentiment d'infériorité.

Le trait le plus remarquable de leur personnalité est un besoin inconscient et impératif d'affection et de contact. En un sens ils sont très dépendants les uns des autres et surtout de leur esprit communautaire. Mais ils manifestent en apparence une attitude individualiste et indépendante. Il y a donc ici une contradiction marquée: ils recherchent la solidarité que leur apporte leur petit groupe isolé et dès qu'ils s'en éloignent ils se sentent abandonnés et inadéquats. Ceci rappelle le sentiment d'omnipotence que l'enfant ressent par incorporation du père. Et pourtant, au sein du groupe, ils sont incapables de partager sur un plan émotif ou de travailler en collaboration vers un même but.

En conséquence, ils se montrent réticents à établir des contacts profonds les uns avec les autres. Ils ont une tendance au soupçon et à la méfiance. Ils sont très prudents dans leurs relations amicales et dans l'expression de leurs sentiments. A l'occasion ils réagissent de façon explosive mais le plus souvent ils gardent longtemps rancune plutôt que de laisser libre cours à leurs sentiments agressifs.

Extérieurement on les jugerait très pacifiques mais c'est qu'ils ne se donnent pas la peine de s'engager émotivement. Ils ont une affectivité égocentrique qui leur permet de vivre en bons termes avec leurs semblables parce qu'elle est contrebalancée par leurs tendances à l'introversion.

L'expression de leurs impulsions instinctuelles se fait très librement et sans éveiller de culpabilité. Ils ne ressentent aucune contrainte de leur super-ego qui semble très faible; les tendances dépressives leur sont donc étrangères. Ils ont une attitude passive et soumise devant les événements de la vie courante. Cependant l'on voit percer des tendances négatives d'opposition dans un certain groupe formé, assez étrangement, de femmes dans la quarantaine, et d'adolescents.

Leur niveau d'intelligence fonctionnelle est assez élevé mais celle-ci est d'un caractère plus pratique que théorique. Leur esprit est peu enclin à la synthèse et à l'abstraction de sorte que leur vie intérieure

très riche ne trouve pas d'expression dans l'oeuvre créatrice et artistique.

Nous avons jusqu'ici esquissé un profil de personnalité d'après les éléments communs retracés dans le Rorschach. Voici maintenant quelques traits idiosyncrasiques. Des tendances paranoïdes très claires se manifestaient dans le protocole d'une certaine femme et nous en avons trouvé des traces un peu plus estompées chez trois membres de sa famille. L'évidence d'un conflit névrotique à symptomatologie hystérique ressortait clairement chez trois individus d'une autre famille.

Le groupe de huit personnes ayant subi une influence étrangère ont aussi des traits qui leur sont propres. Ils manifestent une anxiété toute intellectuelle et dépersonnalisée, et sont conscients d'un conflit intérieur.

Considérant les composantes de la personnalité ayant trait au rôle que l'individu joue dans la société nous trouvons les mêmes différences entre les groupes d'âges que dans notre propre culture. Les adolescents ont tendance à réagir contre leur millieu; les vieillards se montrent enclins à l'introspection et à l'analyse personnelle. Les enfants cependant montrent plus de maturité que ceux de notre culture: ils sont moins impulsifs et expansifs, plutôt réfléchis et sérieux. Leur besoin d'affection est très vif. Les différences selon le sexe ne sont pas remarquables sauf le fait que les femmes semblent moins bien adaptées à la réalité et à leur environnement que les hommes.

Une analyse encore plus étendue du matériel fourni par nos tests serait sans doute possible. Mais nous avons voulu surtout établir l'utilité du test Rorschach comme instrument d'une étude psychologique approfondie, au service de la recherche anthropologique.

NATIONAL RESEARCH COUNCIL GRANTS-IN-AID AND SCHOLARSHIPS IN PSYCHOLOGY

A YEAR and a half has elapsed since the formation of an Associate Committee on Applied Psychology in the National Research Council. During that time a number of applications for Grants-in-Aid of psychological research and for graduate scholarships have been entertained by the Committee and several awards have been made by the Council. The final date for receiving applications for research grants or scholarships for tenure in 1950-1, is February 1, 1950.

In its work thus far, the Committee has made some observations upon the applications appearing before it, and would like at this time to place before the members of the Canadian Psychological Association certain features desirable in applications which may be made to it in future.

GRANTS-IN-AID OF RESEARCH

With respect to research grants the following are the chief observations:

(*a*) Applications should give a clear account of the origin of the problem and the present state of knowledge concerning it. This will entail a brief summary of previous relevant work and an explanation of how the proposed research stands in relation to it. The exact nature of the problem and of the hypotheses to be tested must be stated explicitly. It is distinctly *not* sufficient to give, as a complete account of the problem, some such description as "research on the formation of social attitudes," or "a study of vocational interests."

(*b*) Applications must give reasonably detailed accounts of how it is intended to go about investigating the problem proposed, and of what equipment would have to be provided over and above what would already be available.

(*c*) Enough detail must be given regarding estimated costs to enable the Committee to determine that these are reasonable, and that the total sum requested can be fully justified. It is to be noted that estimates should not include ordinary furniture and standard equipment with which any laboratory can be assumed to be normally provided.

(*d*) The responsibility for the planning and direction of the research lies with each grantee. In connection with grants which provide for the employment of assistants, the following interpretation of N.R.C. policy is of interest:

(1) Assistants employed under Grants-in-Aid of research, may be students or they may be full-time research assistants. A grantee may select and employ *students* in two ways:

(*a*) Under Term Scholarships; designed for the part-time employment of students, during the academic session,

231

(*b*) Under Summer Scholarships; designed for the full-time employment of students during the summer vacation.

(2) Students employed, by a research grantee, under Term Scholarships, on work which gives them academic credit, or is of scientific value, may not be paid more than is provided for a comparable student who wins a competitive N.R.C. Scholarship. (See values under "Scholarships" below).

(3) Graduate students employed under Summer Scholarships may be paid at rate of $125 per month for full-time service, and undergraduate students at the rate of $100 per month.

(4) Full-time research assistants and others who do not receive any academic credits for their work, may be employed at such rates as are reasonable for persons of their training and relevant experience.

(5) All salary rates paid under Grants-in-Aid of research are subject to approval by the N.R.C. in order to maintain reasonable uniformity.

(*e*) Applications, and all required supporting documents, must be received in Ottawa by the General Secretary of the National Research Council not later than February 1, 1950. Receipt earlier than this date is advisable, however, since last moment arrival leaves insufficient time for clearing up any omission or obscurity in the details of the application, should this prove necessary.

(*f*) While there is no wish on the part of the Committee to limit the range of problems on which grants for research are made, it is well to point out that those which are closely related to fields of interest of Departments of the Government of Canada are more likely to receive favourable consideration. (Perhaps one practical exception to this at the present time is problems of mental health, on which so large a measure of support is already being given through grants to the Provinces). The attention of the reader is invited in this connection to the areas of study listed in a previous statement in the *Canadian Journal of Psychology*, December, 1948, pages 187-90. Persons wishing to examine the possible use of facilities which might be provided by the Government Departments in this connection (e.g. Indian Affairs, Penitentiary Commission, Unemployment Insurance Commission, etc.) will be given every possible assistance in making arrangements to do so on inquiry to the Secretary of the Committee, O. E. Ault, Civil Service Commission, Ottawa.

SCHOLARSHIPS

The three classes of award available, and their values, are as follows: Bursaries, tenable in the first year of graduate work, $450; Studentships, tenable in the second and third graduate years, $750; and Fellowships, which may be awarded for the third graduate year to outstanding candidates, $900. All are tenable for a period of eight months.

On the matter of scholarships, the chief recommendation that the Committee would like to make is that applicants be limited to those who appear to possess a potentiality for and an interest in original scientific work. The number is limited and these awards are given to the most highly qualified candidates in each category. Consequently, high standing, as reflected by examination marks on undergraduate or graduate courses, is essential. In all cases, expressions of opinion should be received from competent instructors indicating whether the applicant shows promise of development as a creative research scientist.

It appears desirable to ensure, on the one hand, that as many as possible of the most promising and deserving applicants are considered, and, on the other, that time is not taken up unnecessarily with the evaluation of candidates of doubtful merit, who present to the Council a depreciated picture of the quality of students in Psychology. It is therefore suggested that Departmental chairmen would do well to encourage as many as possible really good students to apply for scholarships and to discourage applications from students whose academic record or research aptitude are second rate.

Please note that the final date for all applications is February 1, 1950.

> O. E. AULT,
> *Secretary, Associate Committee*
> *on Applied Psychology*

1950 ANNUAL MEETING
CANADIAN PSYCHOLOGICAL ASSOCIATION

Royal York Hotel, Toronto, Wednesday to Friday, May 18, 19, 20.

Accommodation: Room reservations are now being accepted by the Hotel, and should be made *early*.

Papers: A call for papers will be mailed early in the New Year, but advance notification will be appreciated. By resolution of Council, Student Affiliates may present papers if sponsored by a Full Member of the Association.

A. H. SMITH, *Chairman,*   J. D. KETCHUM, *Chairman,*
  Arrangements Committee   *Programme Committee*

Department of Psychology, University of Toronto,
Toronto 5, Ont.

THE NET OF RECIPROCAL INFLUENCE
A Problem in Treating Sociometric Data

JOHN R. SEELEY
University of Toronto

THE following note is intended primarily as a contribution to socio-metry—a mere technical note on the processing of sociometric data. It has, however, a bearing also on one characteristic of many social phenom-ena which makes them, at least at first blush, difficult to "get hold of." The characteristic referred to is that of "infinite" or "indefinitely re-peated reflection." We shall deal with the sociometric problem first, and then make a few comments on other areas where a like conceptualization seems to be needed if the facts are to be adequately caught.

I

The problem that arises in connection with sociometric tables (for example, of children's choices of companions in selected activities) is that of so "expressing" them that they reflect in a manner adequate to our purpose, the state of affairs we purport to describe. This has customarily been done, either by pictorializing the choices, or by reporting the total choices received by each child. This is inadequate in more respects than those pointed out in the article by Festinger.[1]

To make clear the point at which the inadequacy occurs, we need only to conjure up an imaginary group in which two children are "tied" with, say, n choices each. Both, in the usual sociometric reporting, would appear as "equally popular" or "equally influential." But let us suppose that the choices given to the first child come from the n "next-most popular" children; while those given to the second child all come from the n "least-popular" members of the group. It is obvious that only in a specious sense can the latter child be regarded as being the equal in popularity or influence of the former. What seems to be needed, then, is a way of representing the state of affairs indicated by the choices made; what we presently have is, a representation of those choices biased by the assumption, never made explicit, of course, that one choice is very like another.

The problem, if adequate representation is to be had, might be formu-lated as follows: how shall we represent each target child's popularity-as-shown-by-the-choices, weighting those choices according to the "popu-larity" of the source-of-choice child? As soon as the problem is so posed, and as soon as we recall that both "source" and "target" children are the same children, we seem to be, and indeed we are, involved in an "infinite

[1] L. Festinger, "The Analysis of Sociograms Using Matrix Algebra" (*Human Rela-tions*, II, 2, 153-8).

regress": A's popularity is a function of the "popularity" of those who chose him; and their popularity is a function of those who chose them, and so *ad infinitum*.

Nevertheless, there is a solution, and it applies alike to sociometric records that show only choice or non-choice (0 or 1) and to those that permit ordered choices (e.g. 3, 2, 1, or 0). The solution which imputes the correct "weighted" relative popularity to each child may be described either as the solution to the set of simultaneous equations implicit in the original matrix, or as the relative marginal totals that would result when the matrix was raised to the nth power as $\lim\limits_{n \to \infty}$.

Let us examine an original matrix or scattergram of choices containing m choices by each of k'' children, or $k''m$ choices in all. Such a matrix would have the following appearance:[2]

Child chosen \ Child choosing	A	B	C	D	. . .	K	Σ
A	0	ba	ca	da	. . .	ka	$\Sigma x_{\cdot a}$
B	ab	0	cb	db		kb	$\Sigma x_{\cdot b}$
C	ac	bc	0	dc		kc	$\Sigma x_{\cdot c}$
D	ad	bd	cd	0		kd	$\Sigma x_{\cdot d}$
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
K	ak	bk	ck	dk	. . .	0	$\Sigma x_{\cdot k}$
Σ	m	m	m	m	. . .	m	$k''m$

The meaning of the notation will be clear. The usual index of "popularity" is the set of quantities appearing at the right-hand margin, ascribed to the respective children. The index of popularity we require must, however, satisfy the following equations.

(1) $$a + b + c + d \ldots + k = 1$$

Where a represents the sought-for relative popularity of child A; b, that of child B, etc., and the sum of all these

[2]Note that the usual sociometric reporting arrangement has been transposed in order not to conflict later with the row-column convention of matrix algebra.

relative popularities is defined as to total (represented by 1).

(2.1) $a = (\qquad x_{ba}b + x_{ca}c \ . \ . \ . \ . \ . \ . \ x_{ka}k) \div m$

(2.2) $b = (x_{ab}a + \qquad x_{cb}c \ . \ . \ . \ . \ . \ . \ x_{kb}k) \div m$

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.
.

(2.k) $k = (x_{ak}a + x_{bk}b \qquad \ . \ . \ . \ . \ . \ . \ x_{jk}j) \div m$

These simultaneous equations may be solved by the methods of simple algebra, though if there are very many children, the method is laborious, even in the relatively simple case when x can represent only the values of 1 or 0. It is simpler to use the methods of matrix algebra, but this requires some rearrangement of the original matrix. The rearrangement required may be derived from the above equations.

From equations (2.1) to (2.k) we may derive the following equations:

(2.11) $ma - x_{ba}b - x_{ca}c \ . \ . \ . \ . \ . \ . \ . \ -x_{ka}k = 0$

(2.21) $-x_{ab}a + mb - x_{cb}c \ . \ . \ . \ . \ . \ . \ . \ -x_{kb}k = 0$

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.
.
.

(2.k1) $-x_{ak}a - x_{bk}b \ . \ . \ . \ . \ . \ . \ . \ -x_{jk}j + mk = 0$

Equation (1) added to each of these produces the following equations which are suitable for matrix solution:

(2.12) $(m + 1)a + (1 - x_{ba})b + (1 - x_{ca})c \ . \ . \ . \ .(1 - x_{ka})k = 1.$

(2.22) $(1 - x_{ab})a + (m + 1)b + (1 - x_{cb})c \ . \ . \ . \ .(1 - x_{kb})k = 1.$

.
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.

(2.k2) $(1 - x_{ak})a \ . \ . \ . \ . \ . \ . \ . \ . \ . \ . \ . \ . \ . \ . \ (m + 1)k = 1.$

This suggests the following simple two-step solution:

(a) Rewrite the original matrix inserting $(m + 1)$ in each cell in the diagonal; and $(1 - x_{rc})$ instead of x_{rc} in each other cell.

(b) Solve by the usual matrix method, e.g.,

(a)   Rewritten matrix: (Let $m + 1 = n$; and $1 - x_{ab} = x'_{ab}$, etc.).

Child chosen / Child choosing	A	B	C	D	. . .	K	Σ
A	n	x'_{ba}	x'_{ca}	x'_{da}	. . .	x'_{ka}	$n + k - 1 - \Sigma x_{\cdot a}$
B	x'_{ab}	n	x'_{cb}	x'_{db}	. . .	x'_{kb}	$n + k - 1 - \Sigma x_{\cdot b}$
C	x'_{ac}	x'_{bc}	n	x'_{dc}		x'_{kc}	$n + k - 1 - \Sigma x_{\cdot c}$
D	x'_{ad}	x'_{bd}	x'_{cd}	n		x'_{kd}	$n + k - 1 - \Sigma x_{\cdot d}$
.	.	.	.	.		.	
.	.	.	.	.	.	.	
.	.	.	.	.		.	
K	x'_{ak}	x'_{bk}	x'_{ck}	x'_{dk}		n	$n + k - 1 - \Sigma x_{\cdot k}$
Σ	k''	k''	k''	k''		k''	k''^2

(b) *Solution*:

   Since $na + X'_{ba}b + x'_{ca}c + x'_{da}d \;.\;.\;.\; x'_{ka}k = 1.$

   $x'_{ab}a + nb + x'_{ab}c + x'_{db}d \;.\;.\;.\; x'_{kd}k = 1.$
      etc.,

$$a = \underline{\triangle \,.\, a} = \frac{A_1 - A_2 + A_3 \;.\;.\;.\;.\; (-1)^{k-1}A_k}{A_1a_1 - A_2a_2 \;.\;.\;.\;.\; (-1)^{k-1}A_ka_k}$$

$$\triangle$$

$$b = \underline{\triangle \,.\, b} = \frac{B_1 + B_2 - B_3 \;.\;.\;.\;.\; (-1)^{k}B_k}{-B_1b_1 + B_2b_2 \;.\;.\;.\;.\; (-1)^{k}B_kb_k}$$

$$\triangle$$
      etc.,

   Where A_1, A_2, etc., represent the values in column A of the rewritten matrix and a_1, a_2, etc., represent the minor determinants.

(c) *Numerical example*

   A simplified example may make this clear. There follows a matrix showing four children permitted two choices each.

(i) *Original matrix*

Child chosen \ Child choosing	A	B	C	D	Choices received	Relative choices received
A	0	1	1	1	3	.375
B	1	0	1	0	2	.250
C	1	0	0	1	2	.250
D	0	1	0	0	1	.125
Choices given	2	2	2	2	8	1.000

(ii) *Rewritten matrix*

	A	B	C	D	
A	3	0	0	0	3
B	0	3	0	1	4
C	0	1	3	0	4
D	1	0	1	3	5
	4	4	4	4	$16 = k^2$

(iii) *Solution*

$$a = \frac{\triangle \cdot a}{\triangle} = 28/84 = .333$$

$$b = \frac{\triangle \cdot b}{\triangle} = 24/84 = .286$$

$$c = \frac{\triangle \cdot c}{\triangle} = 20/84 = .238$$

$$d = \frac{\triangle \cdot d}{\triangle} = 12/84 = .143$$

$$\overline{\sum = a + b + c + d = 1.000}$$

It will be noted that the relative influence of A and C is overestimated and that of B and D underestimated on the original matrix.

(d) If the original matrix had been raised in power, the ratio of its row totals to grand total would have approximated those shown in the above solution, and would have tended toward these figures as a limit as the power to which the matrix was raised tended toward infinity as a limit. ▪

It can be shown, moreover, that the distribution of relative influence by cells is such that each cell contains $\frac{1}{k''}$ $\sum x._r$, where $k'' =$ the number of children and $\sum x._r$ is the figure indicated for each row in the above solution. The complete matrix would then appear as follows:

Chosen \ Chooser	A	B	C	D	Total relative choice received
A	.0833	.0833	.0833	.0833	.333
B	.0715	.0715	.0715	.0715	.286
C	.0595	.0595	.0595	.0595	.238
D	.0358	.0358	.0358	.0358	.143
Total relative choices made	.250	.250	.250	.250	1.000

This may be contrasted with the original matrix, which, "relativized," follows:

Chosen \ Chooser	A	B	C	D	Σ
A	.000	.125	.125	.125	.375
B	.125	.000	.125	.000	.250
C	.125	.000	.000	.125	.250
D	.000	.125	.000	.000	.125
Σ	.250	.250	.250	.250	1.000

Obviously these two matrices represent different things. The new matrix represents the weights of choice taking full count of the unequal, dynamic, non-symmetrical character of the relations of power, choice, or preference involved. The old matrix is a simple record of "choices made," uninfluenced by these considerations, and representing by implicit as-

sumption the equality of "votes" which, perhaps, ought to be morally, but, in fact, functionally, are rarely or never "equal."

II

That the situation conceptualized above is frequently characteristic of the situations which the social (and other) sciences seek to describe is all too evident. Some examples may make clear the common "summatory" characteristic.[3]

In an affectional situation between two people, a change in A's affection for B (if communicated) may well procure some change in B's feeling for A; which, in turn, has repercussions on A's feeling for B . . . . and so, to the divorce court or to holy matrimony.

In an economic situation departing from that of the classical economists (as nearly all now do) in the sense that buyers or sellers are few enough to be able (and compelled) to take the action each of the other into account, the calculus of bidding must move in terms similar to the above.

In the formation of public opinion, to the degree that a bandwagon effect actually obtains, the successive powers of the "original matrix" of opinions-and-opinion-holders should approximate the temporally successive stages from amorphy to decision.

In the field of politics, the "balance of power" as between States and within them may well be analogously viewed.

In biology, the "web of life" may find or tend to find new equilibria in formally similar terms; and it is difficult to deal with homeostatic phenomena without invoking such concepts.

Be these things as they may, and the above provides only an ideal-typical construct that might enter into appropriate hypotheses, it seems clear that sociometric data, processed as described, come nearer to representing the realities they purport to describe.

[3]This summatory characteristic may apply, as the illustrations suggest, either to the state of affairs at a given moment or to successive states in time for the "same "system.

BOOK REVIEWS

Neurology. By Roy R. Grinker and Paul C. Bucy. Toronto: Ryerson (Springfield, Ill.; Thomas), fourth edition, 1949. Pp. 1138. $15.75.

This is a textbook on the diagnosis and treatment of diseases of the nervous system, but it aims also to provide the medical student with a theoretical orientation in such matters of psychological concern as sleep, aphasia, and localization of cerebral function; it is furthermore a valuable source of information for the psychologist working in the clinic. The present review is concerned with these psychological aspects of Grinker and Bucy's text.

The book is attractively printed and bound, but its usefulness is limited by the lack of a name index, and by the use of "Neurology" as a running head on all left-hand pages throughout the book. In a work of such length and complexity, the reader would be helped greatly by the use of chapter titles on the left and section sub-heads on the right; the un-informative use of the book's title deprives the reader of useful sign-posts. There is an extensive bibliography (well over two thousand titles), but it contains papers to which no reference is made in the text, and in the absence of a name index no back reference can be made from a paper in the bibliography to discussion of it in the text.

The book is in general well written and easy to read, although with a number of quite surprising lapses suggesting that revision was done rather hastily (for example, page 111, line 16, who or what are "they"?). On some topics, it seems, either more or less should have been said. Obviously this book could not comprise treatises on difficult topics such as stuttering, aphasia, sleep disorders, and so on, but brevity has led the authors into misleading simplicity, in which certain hypotheses are presented as if they were established fact; it would not have taken much more space to have made it clear to the medical student that we do not as yet know all the answers. Discussion of aphasia is on the basis of Head's work only, with a fair amount of space given to a description of his test methods, which would be useless as they are presented here, without norms and with the only statement that "wide deviations may be separated as abnormal."

On the problem of localization of cerebral function, the authors are clear and sound. An excellent statement of the present situation is provided, and this reviewer will not cavil seriously at the authors' acceptance of Halstead's work as definitive, although he does not fully agree with them. In the reviewer's opinion, the defects of the book are defects in the presentation of neurophysiological and psychological problems for the medical student who may not be in a position to recognize its limitations.

But for the psychologist, who is already apprised of the complexity of the matters in question, this should be a very useful book indeed. On the whole, the authors are on the side of the angels. Their reputations are

241

such that a psychologist may assume that in neurological matters this is an authoritative and dependable treatment. The book is well written, and can be recommended to the psychologist who wants a reference book on neurological diseases, their causes, and treatment.

DONALD O. HEBB

McGill University

Personality Projection in the Drawing of the Human Figure. By KAREN MACHOVER. Toronto: The Ryerson Press, 1949. Pp. ix, 181. $5.25.

DEPUIS la publication de *Psychodiagnostic* par H. Rorschach et de *Explorations in Personality* par H. A. Murray, ce petit ouvrage est peut-être celui qui, du point de vue technique, fournit à la psychologie clinique l'apport le plus solide et le plus fécond. Remarquable par sa densité et sa concision, il ne contient que des données empiriques étayées sur des observations accumulées pendant une quinzaine d'années. Aucune hypothèse ne vient artificiellement encombrer l'exposé de faits abondamment ou partiellement contrôlés, ou l'obscurcir. Très à propos, l'auteur se contente d'indiquer ici et là les problèmes qui restent encore à résoudre.

Après quelques considérations théoriques indispensables à la compréhension et à l'application de la méthode employée, on trouve une interprétation minutieuse de tous les détails qui intègrent la représentation graphique de la personne humaine. Ajoutons que cet essai d'interprétation s'étend à la structure et à la forme du dessin aussi bien qu'à son contenu.

Il va sans dire que le principal avantage de la méthode est son extrême simplicité. Par contre, elle exige de la part de celui qui s'en sert bien autre chose que l'application toute mécanique d'une clé de correction. A défaut d'expérience clinique, nombre de détails importants risquent de passer inaperçus ou d'être mal interprétés. De plus, une connaissance approfondie de la psychologie dynamique est absolument requise pour saisir exactement la signification et la portée des interprétations proposées. En effet, le plus grand mérite de l'auteur consiste précisément à avoir abandonné, dans un tel genre de recherche, le point de vue purement typologique et génétiste, pour essayer de formuler ses explications en termes dynamiques. Naturellement, tout cela fait appel à des présupposés qu'il faut chercher ailleurs.

NOËL MAILLOUX

Université de Montréal

Editors' Note: The reviewer feels that this book is very useful for clinical psychology, from the technical point of view. Remarkable for its fullness and for the extreme simplicity of its treatment, it contains data supported by observations accumulated over a period of fifteen years. Its greatest merit lies in the fact that the author has tried to formulate his explanations in dynamic terms.

PROCEEDINGS OF THE ANNUAL MEETING OF THE PSYCHOLOGICAL ASSOCIATION OF THE PROVINCE OF QUEBEC

May 28, 1949

BECAUSE the Annual Conference of the Canadian Psychological Association was held in Montreal this spring, the Annual Conference of the Psychological Association of the Province of Quebec was merged with that of the National Association, and a special period at four o'clock in the afternoon on Saturday, May 28, was set aside for the Annual Business Meeting of the Provincial Association. The meeting was held in the Normandie Room of the Mount Royal Hotel with the president, Dr. Robert B. Malmo, in the chair. Attendance was very poor, following a week of conference activities, and a bare quorum managed to be present.

Dr. Malmo thanked the membership and the executive for their support during the past year. He asked that discussion be as brief as possible since the meeting was limited to one hour.

Professor Douglass Burns Clarke, secretary of the Association, reported that present membership stood at 95 full members, 39 associate members, and 88 student members. He suggested, however, that these figures included a number of inactive members who no longer were served by the Association, and asked that the membership list be given a careful check next year.

He reported that seven sessions had been held in the past season. The first had been a brief business and social meeting. Two had been for the purpose of hearing guest speakers: Dr. Frank A. Beach, Professor of Psychology at Yale University, and former Chairman and Curator of the Department of Animal Behaviour at the American Museum of Natural History, who spoke on "Experimental Studies of Reproductive Behaviour," and Dr. O. Hobart Mowrer, Director of the University of Illinois Psychological Clinic, who spoke on "Poe's *Raven*—A Study of Super Ego Repression." Other meetings had split into discussion groups, on Theoretical and Experimental Psychology—under the leadership of Mrs. Milner and Dr. Ferguson; on Industrial Psychology—under the leadership of Dr. Mahoney and Major Gagnon; on Vocational Counselling—under the leadership of Professor Vinette and Dr. Tuckman; and on Child and Developmental Psychology, under the leadership of Father Mailloux and Mme. Decarie. Each of these groups met concurrently and developed a highly successful seasonal programme.

Professor Clarke reported further that because of the departure of Dr. Frances Alexander, the executive had appointed Dr. Georges Dufresne as Chairman of the Committee on Certification and Training for the

243

remainder of the year. The executive, having received through the kind co-operation of the American Psychological Association full information concerning the operation of its placement service, had appointed a committee to study the placement of psychologists in this area. The executive had supported the National Association's application for a Dominion Charter, and had also given further study to the matter of affiliation with the Conference of State Psychological Associations.

Mrs. Rosalie Sofin, treasurer of the Association reported a total income of $183.44, a total expenditure of $212.75. As there had been a balance in the bank at the beginning of the year of $236.92, the present balance was $24.17 to which must be added $81.65 in cheques outstanding as of May 25, 1949, leaving a total balance of cash in the bank of $105.82.

Dr. G. Dufresne reported the activities of the Committee on Training and Certification. During the year, the Association had received nineteen applications for membership. Four candidates were admitted as full members, six as associate members, and seven as student members. The Committee was revising the present application form. The Committee had also studied the question of incompetent people offering professional psychological services, and had turned over to the executive a resolution suggesting a publicity campaign to educate the public to the dangers of such services. Finally, after a long study of the question of certification, it had prepared a resolution that if the Canadian Psychological Association did not, at its 1949 meeting, present a practical plan for federal certification, the P. A. P. Q. should proceed automatically to organize such a plan on a provincial basis.

Dr. J. Tuckman, reporting on the Vocational Guidance Section, stated that though the section had acted chiefly as one of the discussion groups during the past year, activities had been carried over from the year before. It had continued its series of articles on various occupations in Dr. D. Wilson's page in the "Montreal Daily Star," and it had conducted a series of six radio broadcasts entitled "Square People in Round Jobs."

Speaking for the Committee on Publications, Dr. Tuckman asked that members send material to the journal of the Canadian Psychological Association. Speaking for the Committee on Job Placement, he suggested that there were many financial difficulties involved and said that he felt it was essentially a problem for the C. P. A. He moved that the P.A.P.Q. ask the C.P.A. to study the problem and to set up a committee to study and establish a national job placement service. Dr. Tuckman's motion on job placement was seconded by Dr. J. S. A. Bois, who noted that the Finance Committee of the C.P.A. will study the problem of obtaining finances for a placement service. The motion was carried.

M. J. M. Chevrier stated that the publicity committee had been active through the year.

No report was received from the Clinical Section.

It was moved by Dr. D. Wilson and seconded by Mrs. Sofin, that the duties of the Associate Secretary be a matter of annual arrangement with the secretary.

The meeting discussed the question of affiliation with the conference of State Psychological Associations. It was noted that it is apparent that State Associations are becoming more important and will elect representatives on the Council instead of the Regional Associations. A fee of 50 cents per person per year is optional but will probably become compulsory. Affiliation would offer the P.A.P.Q. an opportunity of obtaining some of the jounals at reduced rates, a chance of having a member on the council of the A.P.A., and a share in the job of struggling for professional certification for psychologists. The meeting voted favourably on a motion by Dr. E. C. Webster, seconded by Dr. J. S. A. Bois, to proceed with affiliation.

It was moved by Dr. E. C. Webster, seconded by Major A. Gagnon, and carried, that a vote of thanks be sent to the Montreal "Gazette" for the two page three editorials, and the other two articles on the editorial page in which admirable work had been done in educating the public against "quackery."

The Report of the Nominating Committee was received, and on motion by Major Brown, seconded by Major Gagnon, that nominations for President be closed, Professor R. Vinette was elected for the coming year. A further motion by Dr. E. C. Webster, seconded by Mr. Farquar, adopted the rest of the slate, and the following were, accordingly, declared elected: *Vice-President*, Dr. J. Tuckman; *Secretary*, Professor D. B. Clarke; *Assoc. Secretary*, Mme. Thérèse Decarie; *Treasurer*, Dr. G. L. Barbeau; *Chairman, Committee on Training and Certification*, Dr. G. Dufresne; *Chairman, Committee on Research*, Dr. D. O. Hebb; *Chairman, Committee on Publications*, Major F. T. Brown; *Committee on Training and Certification—Industrial*, Major A. Gagnon, Dr. E. C. Webster; *Educational*, Dr. Ferguson, Brother B. Laurier; *Abnormal and Clinical*, Dr. G. Y. Moreau, Dr. H. E. Lehman.

The meeting adjourned following a short word of appreciation by Professor R. Vinette, the incoming President.

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DOUGLASS BURNS CLARKE,

Secretary.

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